

NiceZyme View of ENZYME: EC 6.5.1.1

Official Name

DNA ligase (ATP).

Alternative Name(s)

DNA joinase.

DNA repair enzyme.

Polydeoxyribonucleotide synthase (ATP).

Polynucleotide ligase (ATP).

Sealase.

Reaction catalysed

ATP + (deoxyribonucleotide)(n) + (deoxyribonucleotide)(m) \rightleftharpoons AMP + diphosphate + (deoxyribonucleotide)(n+m)

Comment(s)

- Catalyzes the formation of a phosphodiester at the site of a single- strand break in duplex DNA.
- RNA can also act as substrate to some extent.

Human Genetic Disease(s)

LIG4 syndrome MIM:606593

Cross-references

PROSITE PDOC00295

BRENDA 6.5.1.1

PUMA2 6.5.1.1

PRIAM enzyme-specific profiles 6.5.1.1

Kyoto University LIGAND chemical database 6.5.1.1

IUBMB Enzyme Nomenclature 6.5.1.1

IntEnz 6.5.1.1

MEDLINE Find literature relating to 6.5.1.1

MetaCyc 6.5.1.1

P18858, DNL1_HUMAN;	P37913, DNL1_MOUSE;	Q9JHY8, DNL1_RAT;
P51892, DNL1_XENLA;	P49916, DNL3_HUMAN;	P97386, DNL3_MOUSE;
P49917, DNL4_HUMAN;	Q08387, DNL4_YEAST;	Q02093, DNL1_ACIAM;
Q9YD18, DNL1_AERPE;	O67398, DNL1_AQUAE;	Q42572, DNL1_ARATH;

UniProtKB/Swiss-Prot

O29632, DNLI_ARCFU;	P35970, DNLI_ASFB7;	P26813, DNLI_ASFM2;
P07717, DNLI_BPT3;	P00970, DNLI_BPT4;	P19088, DNLI_BPT6;
P00969, DNLI_BPT7;	Q27474, DNLI_CAEEL;	P52496, DNLI_CANAL;
Q67480, DNLI_FOWPV;	P44121, DNLI_HAEIN;	Q9HR35, DNLI_HALSA;
Q8TMT1, DNLI_METAC;	Q57635, DNLI_METJA;	Q8TWN3, DNLI_METKA;
Q8PTK1, DNLI_METMA;	Q6LYM1, DNLI_METMP;	P54875, DNLI_METTF;
Q50566, DNLI_METTH;	Q9YMV2, DNLI_NPVLD;	Q6L195, DNLI_PICTO;
Q9V185, DNLI_PYRAB;	O93723, DNLI_PYRAE;	P56709, DNLI_PYRFU;
O59288, DNLI_PYRHO;	Q9HHC4, DNLI_PYRKO;	P12000, DNLI_SCHPO;
Q9FCB1, DNLI_STRCO;	Q4JAM1, DNLI_SULAC;	Q9P9K9, DNLI_SULSH;
Q980T8, DNLI_SULSO;	Q976G4, DNLI_SULTO;	Q9HJ26, DNLI_THEAC;
Q9HH07, DNLI_THEFM;	Q979A1, DNLI_THEVO;	O57250, DNLI_VACCA;
P20492, DNLI_VACCC;	P16272, DNLI_VACCV;	P33798, DNLI_VARV;
P04819, DNLI_YEAST;		

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All UniProtKB/Swiss-Prot entries referenced in this entry, with possibility to download in different formats, align etc.

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